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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/395,184      | 09/14/1999  | SHUICHI UENO         | 0057-2511-2Y        | 5567             |

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EXAMINER

LOKE, STEVEN HO YIN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2811

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/395,184

Applicant(s)

UENO ET AL.

Examiner

Steven Loke

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-12,15,16,18-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,15,16,20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 4,5,18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2811

1. Claims 15, 20, 22, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Figs. 2 and 3 disclose the second well on one side having a higher concentration than the first wells on one side. The specification never discloses the second well on the other side having a higher concentration than the first wells on the other side as claimed in claim 15.

The specification (page 11, lines 7-9) discloses a single element (e.g., an MOS transistor) is formed in a single first region R1. The specification never discloses each of the first wells comprises a single element as claimed in claims 20, 22 and 23.

2. Claims 4, 5, 18 and 19 are objected to because of the following informalities: Claim 4, lines 2-3, "a predetermined boundary" is unclear whether it is being referred to the predetermined boundary of claim 1. Claim 18, line 2, "a predetermined boundary" is unclear whether it is being referred to the predetermined boundary of claim 16.

Appropriate correction is required.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stolmeijer et al.

Art Unit: 2811

In regards to claim 1, Stolmeijer et al. discloses a semiconductor device in figs. 4 and 5. It comprises: a semiconductor substrate [10]; a plurality of element isolation films [50] formed such as to have predetermined depth from a main surface of said semiconductor substrate, each of the element isolation films [50] dividing the area from said main surface to said depth into a plurality of first regions; first wells [81-84] formed in said first regions, respectively; and a second well [130] formed in a second region deeper than each of said first wells [81-84] in said semiconductor substrate; said second well [130] being in contact with some of said first wells [81, 82] to provide electrical connection therebetween and not being in contact with said first wells [83, 84] adjacent to said some of said first wells [81, 82], wherein said first and second wells [81, 82, 130] of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type (p-type), and said first wells [83, 84] on the other side are of a second conductivity type (n-type).

It would have been obvious to have an element isolation film formed such as to have a predetermined depth from a main surface of the semiconductor substrate and dividing the area from the main surface to the depth into a plurality of first regions because it provides protection to the top surface of the semiconductor device and isolation between the semiconductor devices.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the

Art Unit: 2811

treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claim 16 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Stolmeijer et al.

In regards to claim 16, Stolmeijer et al. shows all the elements of the claimed invention in figs. 4 and 5. It is a semiconductor device, comprises: a semiconductor substrate [10]; a plurality of element isolation films [50] formed such as to have predetermined depth from a main surface of said semiconductor substrate, each of the element isolation films [50] formed such as to have a predetermined uniform depth from a main surface of the semiconductor substrate, said element isolation films [50] dividing the area from said main surface to said depth into a plurality of first regions; first wells [81-84] formed in said first regions, respectively; and a second well [130] formed in a second region deeper than each of said first wells [81-84] in said semiconductor substrate; said second well [130] being in contact with some of said first wells [81, 82], wherein said first and second wells [81, 82, 130] of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type (p-type), and said first wells [83, 84] on the other side are of a second conductivity type (n-type).

7. Claims 4 and 18 would be allowable if rewritten to overcome the objection set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

sl  
August 11, 2002

Steven Loke  
Primary Examiner  
